

<b>Analytical Report Cover Page A3I030288.....</b>	<b>1</b>
Case Narrative .....	2
Executive Summary .....	5
Analytical Method Summary.....	6
Sample Summary .....	7
Analytical Results by Sample .....	8
Quality Control Section.....	26
Chain of Custody .....	36
<b>Total # of Pages in this Document.....</b>	<b>39</b>

## ANALYTICAL REPORT

PROJECT NO. 100.58.15

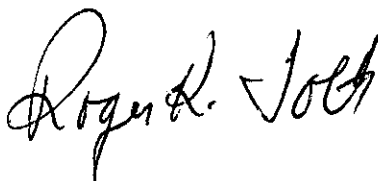
EMD, OH

Lot #: A3I030288

Dan Weed

The Payne Firm, Inc.  
11231 Cornell Park Drive  
Cincinnati, OH 45242

SEVERN TRENT LABORATORIES, INC.



Roger K. Toth  
Project Manager

October 7, 2003

Severn Trent Laboratories, Inc.

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## **CASE NARRATIVE**

A3I030288

The following report contains the analytical results for four water samples and one quality control sample submitted to STL North Canton by The Payne Firm, Inc. from the EMD, OH Site, project number 100.58.15. The samples were received September 03, 2003, according to documented sample acceptance procedures.

STL utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. Preliminary results were provided to Dan Weed on September 11, 2003, on September 29, 2003, and September 30, 2003. A summary of QC data for these analyses is included at the back of the report.

STL North Canton attests to the validity of the laboratory data reported herein. All analyses were performed using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. STL's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

### **SUPPLEMENTAL QC INFORMATION**

#### **SAMPLE RECEIVING**

The temperature of the cooler upon sample receipt was 4.1°C.

See STL's Cooler Receipt Form for additional information.

#### **GC/MS VOLATILES**

The analytical results met the requirements of the laboratory's QA/QC program.

#### **GC/MS SEMIVOLATILES**

The analytical results met the requirements of the laboratory's QA/QC program.

## QUALITY CONTROL ELEMENTS OF SW-846 METHODS

STL North Canton conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

### QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. STL North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

### LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

### METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed below.)

#### Volatile (GC or GC/MS)

Methylene chloride  
Acetone  
2-Butanone

#### Semivolatile (GC/MS)

Phthalate Esters

#### Metals

Copper  
Iron  
Zinc  
Lead\*

- *for analyses run on TJA Trace ICP, ICPMS or GFAA only*
- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

## QUALITY CONTROL ELEMENTS OF SW-846 METHODS (Continued)

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

### **MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable. The acceptance criteria do not apply to samples that are diluted for organics if the native sample amount is 4x the concentration of the spike.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

### **SURROGATE COMPOUNDS**

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprep and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprep and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide, PCB, PAH, and Herbicide methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria.

### **STL North Canton Certifications and Approvals:**

Alabama (#41170), California (#2157), Connecticut (#PH-0590), Florida (#E87225), Illinois (#100439), Kansas (#E10336), Kentucky (#90021), Massachusetts (#M-OH048), Maryland (#272), Minnesota (#39-999-348), Missouri (#6090), New Jersey (#74001), New York (#10975), North Dakota (#R-156), Ohio (#6090), OhioVAP (#CL0024), Pennsylvania (#68-340), Rhode Island (#237), South Carolina (#92007001, #92007002, #92007003), Tennessee (#02903), West Virginia (#210), Wisconsin (#999518190), NAVY, ARMY, USDA Soil Permit, ACIL Seal of Excellence – Participating Lab Status Award (#82)



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## EXECUTIVE SUMMARY - Detection Highlights

A3I030288

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
<b>P6/090203 09/02/03 11:29 001</b>				
Vinyl chloride	1.1	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	4.8	1.0	ug/L	SW846 8260B
<b>MW15/090203 09/02/03 14:30 003</b>				
Vinyl chloride	44	10	ug/L	SW846 8260B
1,1-Dichloroethane	67	10	ug/L	SW846 8260B
1,2-Dichloroethene (total)	250	20	ug/L	SW846 8260B
1,2-Dichloroethane	140	10	ug/L	SW846 8260B
Trichloroethene	47	10	ug/L	SW846 8260B
Benzene	19	10	ug/L	SW846 8260B
<b>P1/090203 09/02/03 15:30 004</b>				
1,1-Dichloroethane	9.5	6.7	ug/L	SW846 8260B
1,2-Dichloroethene (total)	59	13	ug/L	SW846 8260B
1,2-Dichloroethane	28	6.7	ug/L	SW846 8260B
1,1,1-Trichloroethane	7.8	6.7	ug/L	SW846 8260B
Trichloroethene	160	6.7	ug/L	SW846 8260B
Tetrachloroethene	16	6.7	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	24	6.7	ug/L	SW846 8260B

# ANALYTICAL METHODS SUMMARY

A3I030288

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

## References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

## SAMPLE SUMMARY

A3I030288

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FXJAE	001	P6/090203	09/02/03	11:29
FXJA3	002	MW43A/090203	09/02/03	13:49
FXJA4	003	MW15/090203	09/02/03	14:30
FXJA5	004	P1/090203	09/02/03	15:30
FXJA6	005	TRIP BLANK/090203	09/02/03	

### NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.



PAYNE FIRM INC.

Client Sample ID: P6/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-001 Work Order #....: FXJAE1AA Matrix.....: WG  
 Date Sampled....: 09/02/03 11:29 Date Received...: 09/03/03  
 Prep Date.....: 09/11/03 Analysis Date...: 09/11/03  
 Prep Batch #....: 3254486  
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
<b>Vinyl chloride</b>	<b>1.1</b>	<b>1.0</b>	<b>ug/L</b>
Chloroethane	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
Acetone	ND	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
<b>1,1-Dichloroethane</b>	<b>4.8</b>	<b>1.0</b>	<b>ug/L</b>
1,2-Dichloroethene	ND	2.0	ug/L
(total)			
Chloroform	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	10	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	2.0	ug/L
1,2-Dibromo-3-	ND	2.0	ug/L
chloropropane (DBCP)			
Trichlorofluoromethane	ND	1.0	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L

(Continued on next page)

PAYNE FIRM INC.

Client Sample ID: P6/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-001 Work Order #....: FXJAE1AA Matrix.....: WG

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Acrylonitrile	ND	20	ug/L
Chloroprene	ND	2.0	ug/L
3-Chloropropene	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro- 2-butene	ND	1.0	ug/L
Dichlorofluoromethane	ND	2.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutanol	ND	50	ug/L
Methacrylonitrile	ND	2.0	ug/L
Methyl methacrylate	ND	2.0	ug/L
Propionitrile	ND	4.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	91	(74 - 116)

PAYNE FIRM INC.

Client Sample ID: P6/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-001 Work Order #....: FXJAE1AC Matrix.....: WG  
 Date Sampled....: 09/02/03 11:29 Date Received...: 09/03/03  
 Prep Date.....: 09/03/03 Analysis Date...: 09/08/03  
 Prep Batch #....: 3246455  
 Dilution Factor: 1 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Phenol	ND	10	ug/L
bis(2-Chloroethyl)- ether	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2,2'-oxybis(1-Chloro- propane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl- amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro- benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta- diene	ND	50	ug/L
2,4,6-Trichloro- phenol	ND	10	ug/L
2,4,5-Trichloro- phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Dimethyl phthalate	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L

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PAYNE FIRM INC.

Client Sample ID: P6/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-001 Work Order #....: FXJAE1AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
3-Nitroaniline	ND	50	ug/L
Acenaphthene	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro- 2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	10	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Carbazole	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Nitrobenzene-d5	78	(32 - 112)	
2-Fluorobiphenyl	63	(30 - 110)	
Terphenyl-d14	74	(10 - 144)	
Phenol-d5	71	(10 - 113)	
2-Fluorophenol	69	(13 - 110)	
2,4,6-Tribromophenol	63	(21 - 122)	

PAYNE FIRM INC.

Client Sample ID: MW43A/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-002 Work Order #....: FXJA31AA Matrix.....: WG  
 Date Sampled....: 09/02/03 13:49 Date Received...: 09/03/03  
 Prep Date.....: 09/11/03 Analysis Date...: 09/11/03  
 Prep Batch #....: 3254486  
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
Acetone	ND	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene	ND	2.0	ug/L
(total)			
Chloroform	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	10	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	2.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L

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PAYNE FIRM INC.

Client Sample ID: MW43A/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-002 Work Order #....: FXJA31AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acrylonitrile	ND	20	ug/L
Chloroprene	ND	2.0	ug/L
3-Chloropropene	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro- 2-butene	ND	1.0	ug/L
Dichlorofluoromethane	ND	2.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutanol	ND	50	ug/L
Methacrylonitrile	ND	2.0	ug/L
Methyl methacrylate	ND	2.0	ug/L
Propionitrile	ND	4.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
1,2-Dichloroethane-d4	92	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	93	(74 - 116)

PAYNE FIRM INC.

Client Sample ID: MW43A/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-002 Work Order #....: FXJA31AC Matrix.....: WG  
 Date Sampled....: 09/02/03 13:49 Date Received...: 09/03/03  
 Prep Date.....: 09/03/03 Analysis Date...: 09/08/03  
 Prep Batch #....: 3246455  
 Dilution Factor: 1 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Phenol	ND	10	ug/L
bis(2-Chloroethyl) - ether	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2,2'-oxybis(1-Chloro- propane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl- amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro- benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta- diene	ND	50	ug/L
2,4,6-Trichloro- phenol	ND	10	ug/L
2,4,5-Trichloro- phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Dimethyl phthalate	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L

(Continued on next page)

PAYNE FIRM INC.

Client Sample ID: MW43A/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-002 Work Order #....: FXJA31AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
3-Nitroaniline	ND	50	ug/L
Acenaphthene	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro- 2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	10	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Carbazole	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72	(32 - 112)
2-Fluorobiphenyl	58	(30 - 110)
Terphenyl-d14	68	(10 - 144)
Phenol-d5	61	(10 - 113)
2-Fluorophenol	58	(13 - 110)
2,4,6-Tribromophenol	62	(21 - 122)



PAYNE FIRM INC.

Client Sample ID: MW15/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-003 Work Order #....: FXJA41AA Matrix.....: WG  
 Date Sampled....: 09/02/03 14:30 Date Received...: 09/03/03  
 Prep Date.....: 09/11/03 Analysis Date...: 09/11/03  
 Prep Batch #....: 3254486  
 Dilution Factor: 10 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	10	ug/L
Bromomethane	ND	10	ug/L
Vinyl chloride	44	10	ug/L
Chloroethane	ND	10	ug/L
Methylene chloride	ND	10	ug/L
Acetone	ND	100	ug/L
Carbon disulfide	ND	10	ug/L
1,1-Dichloroethene	ND	10	ug/L
1,1-Dichloroethane	67	10	ug/L
1,2-Dichloroethene	250	20	ug/L
(total)			
Chloroform	ND	10	ug/L
1,2-Dichloroethane	140	10	ug/L
2-Butanone	ND	100	ug/L
1,1,1-Trichloroethane	ND	10	ug/L
Carbon tetrachloride	ND	10	ug/L
Bromodichloromethane	ND	10	ug/L
1,2-Dichloropropane	ND	10	ug/L
cis-1,3-Dichloropropene	ND	10	ug/L
Trichloroethene	47	10	ug/L
Dibromochloromethane	ND	10	ug/L
1,1,2-Trichloroethane	ND	10	ug/L
Benzene	19	10	ug/L
trans-1,3-Dichloropropene	ND	10	ug/L
Bromoform	ND	10	ug/L
4-Methyl-2-pentanone	ND	100	ug/L
2-Hexanone	ND	100	ug/L
Tetrachloroethene	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Toluene	ND	10	ug/L
Chlorobenzene	ND	10	ug/L
Ethylbenzene	ND	10	ug/L
Styrene	ND	10	ug/L
Xylenes (total)	ND	20	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	20	ug/L
Trichlorofluoromethane	ND	10	ug/L
Acetonitrile	ND	200	ug/L
Acrolein	ND	200	ug/L

(Continued on next page)

PAYNE FIRM INC.

Client Sample ID: MW15/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-003 Work Order #....: FXJA41AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acrylonitrile	ND	200	ug/L
Chloroprene	ND	20	ug/L
3-Chloropropene	ND	20	ug/L
1,2-Dibromoethane	ND	10	ug/L
Dibromomethane	ND	10	ug/L
trans-1,4-Dichloro- 2-butene	ND	10	ug/L
Dichlorofluoromethane	ND	20	ug/L
1,4-Dioxane	ND	2000	ug/L
Ethyl methacrylate	ND	10	ug/L
Iodomethane	ND	10	ug/L
Isobutanol	ND	500	ug/L
Methacrylonitrile	ND	20	ug/L
Methyl methacrylate	ND	20	ug/L
Propionitrile	ND	40	ug/L
1,1,1,2-Tetrachloroethane	ND	10	ug/L
1,2,3-Trichloropropane	ND	10	ug/L
Vinyl acetate	ND	20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	93	(73 - 122)
1,2-Dichloroethane-d4	89	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	92	(74 - 116)

PAYNE FIRM INC.

Client Sample ID: MW15/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-003    Work Order #....: FXJA41AC    Matrix.....: WG  
 Date Sampled....: 09/02/03 14:30    Date Received...: 09/03/03  
 Prep Date.....: 09/03/03    Analysis Date...: 09/08/03  
 Prep Batch #....: 3246455  
 Dilution Factor: 1    Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Phenol	ND	10	ug/L
bis(2-Chloroethyl) - ether	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2,2'-oxybis(1-Chloro- propane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl- amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro- benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta- diene	ND	50	ug/L
2,4,6-Trichloro- phenol	ND	10	ug/L
2,4,5-Trichloro- phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Dimethyl phthalate	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L

(Continued on next page)

PAYNE FIRM INC.

Client Sample ID: MW15/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-003 Work Order #....: FXJA41AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
3-Nitroaniline	ND	50	ug/L
Acenaphthene	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro- 2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	10	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Carbazole	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Nitrobenzene-d5	66	(32 - 112)	
2-Fluorobiphenyl	54	(30 - 110)	
Terphenyl-d14	51	(10 - 144)	
Phenol-d5	53	(10 - 113)	
2-Fluorophenol	52	(13 - 110)	
2,4,6-Tribromophenol	60	(21 - 122)	

PAYNE FIRM INC.

Client Sample ID: P1/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-004 Work Order #....: FXJA51AA Matrix.....: WG  
 Date Sampled....: 09/02/03 15:30 Date Received...: 09/03/03  
 Prep Date.....: 09/11/03 Analysis Date...: 09/11/03  
 Prep Batch #....: 3254486  
 Dilution Factor: 6.67 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	6.7	ug/L
Bromomethane	ND	6.7	ug/L
Vinyl chloride	ND	6.7	ug/L
Chloroethane	ND	6.7	ug/L
Methylene chloride	ND	6.7	ug/L
Acetone	ND	67	ug/L
Carbon disulfide	ND	6.7	ug/L
1,1-Dichloroethene	ND	6.7	ug/L
1,1-Dichloroethane	9.5	6.7	ug/L
1,2-Dichloroethene	59	13	ug/L
(total)			
Chloroform	ND	6.7	ug/L
1,2-Dichloroethane	28	6.7	ug/L
2-Butanone	ND	67	ug/L
1,1,1-Trichloroethane	7.8	6.7	ug/L
Carbon tetrachloride	ND	6.7	ug/L
Bromodichloromethane	ND	6.7	ug/L
1,2-Dichloropropane	ND	6.7	ug/L
cis-1,3-Dichloropropene	ND	6.7	ug/L
Trichloroethene	160	6.7	ug/L
Dibromochloromethane	ND	6.7	ug/L
1,1,2-Trichloroethane	ND	6.7	ug/L
Benzene	ND	6.7	ug/L
trans-1,3-Dichloropropene	ND	6.7	ug/L
Bromoform	ND	6.7	ug/L
4-Methyl-2-pentanone	ND	67	ug/L
2-Hexanone	ND	67	ug/L
Tetrachloroethene	16	6.7	ug/L
1,1,2,2-Tetrachloroethane	24	6.7	ug/L
Toluene	ND	6.7	ug/L
Chlorobenzene	ND	6.7	ug/L
Ethylbenzene	ND	6.7	ug/L
Styrene	ND	6.7	ug/L
Xylenes (total)	ND	13	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	13	ug/L
Trichlorofluoromethane	ND	6.7	ug/L
Acetonitrile	ND	130	ug/L
Acrolein	ND	130	ug/L

(Continued on next page)

PAYNE FIRM INC.

Client Sample ID: P1/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-004 Work Order #....: FXJA51AA Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acrylonitrile	ND	130	ug/L
Chloroprene	ND	13	ug/L
3-Chloropropene	ND	13	ug/L
1,2-Dibromoethane	ND	6.7	ug/L
Dibromomethane	ND	6.7	ug/L
trans-1,4-Dichloro- 2-butene	ND	6.7	ug/L
Dichlorofluoromethane	ND	13	ug/L
1,4-Dioxane	ND	1300	ug/L
Ethyl methacrylate	ND	6.7	ug/L
Iodomethane	ND	6.7	ug/L
Isobutanol	ND	330	ug/L
Methacrylonitrile	ND	13	ug/L
Methyl methacrylate	ND	13	ug/L
Propionitrile	ND	27	ug/L
1,1,1,2-Tetrachloroethane	ND	6.7	ug/L
1,2,3-Trichloropropane	ND	6.7	ug/L
Vinyl acetate	ND	13	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	94	(61 - 128)
Toluene-d8	97	(76 - 110)
4-Bromofluorobenzene	89	(74 - 116)

PAYNE FIRM INC.

Client Sample ID: P1/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-004 Work Order #....: FXJA51AC Matrix.....: WG  
 Date Sampled....: 09/02/03 15:30 Date Received...: 09/03/03  
 Prep Date.....: 09/03/03 Analysis Date...: 09/08/03  
 Prep Batch #....: 3246455  
 Dilution Factor: 1 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Phenol	ND	10	ug/L
bis(2-Chloroethyl) - ether	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2,2'-oxybis(1-Chloro- propane)	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
N-Nitrosodi-n-propyl- amine	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
1,2,4-Trichloro- benzene	ND	10	ug/L
Naphthalene	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
Hexachlorocyclopenta- diene	ND	50	ug/L
2,4,6-Trichloro- phenol	ND	10	ug/L
2,4,5-Trichloro- phenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
Dimethyl phthalate	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L

(Continued on next page)

PAYNE FIRM INC.

Client Sample ID: P1/090203

GC/MS Semivolatiles

Lot-Sample #....: A3I030288-004 Work Order #....: FXJA51AC Matrix.....: WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
3-Nitroaniline	ND	50	ug/L
Acenaphthene	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
4-Nitrophenol	ND	50	ug/L
Dibenzofuran	ND	10	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Fluorene	ND	10	ug/L
4-Nitroaniline	ND	50	ug/L
4,6-Dinitro- 2-methylphenol	ND	50	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Pentachlorophenol	ND	10	ug/L
Phenanthrene	ND	10	ug/L
Anthracene	ND	10	ug/L
Carbazole	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Pyrene	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	50	ug/L
Benzo(a)anthracene	ND	10	ug/L
Chrysene	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	73	(32 - 112)
2-Fluorobiphenyl	61	(30 - 110)
Terphenyl-d14	72	(10 - 144)
Phenol-d5	63	(10 - 113)
2-Fluorophenol	60	(13 - 110)
2,4,6-Tribromophenol	66	(21 - 122)



PAYNE FIRM INC.

Client Sample ID: TRIP BLANK/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-005 Work Order #....: FXJA61AA Matrix.....: WQ  
 Date Sampled....: 09/02/03 Date Received...: 09/03/03  
 Prep Date.....: 09/11/03 Analysis Date...: 09/11/03  
 Prep Batch #....: 3254486  
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
Acetone	ND	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene	ND	2.0	ug/L
(total)			
Chloroform	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	10	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	2.0	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	ug/L
Trichlorofluoromethane	ND	1.0	ug/L
Acetonitrile	ND	20	ug/L
Acrolein	ND	20	ug/L

(Continued on next page)

PAYNE FIRM INC.

Client Sample ID: TRIP BLANK/090203

GC/MS Volatiles

Lot-Sample #....: A3I030288-005 Work Order #....: FXJA61AA Matrix.....: WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acrylonitrile	ND	20	ug/L
Chloroprene	ND	2.0	ug/L
3-Chloropropene	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
trans-1,4-Dichloro- 2-butene	ND	1.0	ug/L
Dichlorofluoromethane	ND	2.0	ug/L
1,4-Dioxane	ND	200	ug/L
Ethyl methacrylate	ND	1.0	ug/L
Iodomethane	ND	1.0	ug/L
Isobutanol	ND	50	ug/L
Methacrylonitrile	ND	2.0	ug/L
Methyl methacrylate	ND	2.0	ug/L
Propionitrile	ND	4.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
Vinyl acetate	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	94	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
Toluene-d8	95	(76 - 110)
4-Bromofluorobenzene	94	(74 - 116)

## **QUALITY CONTROL SECTION**

# METHOD BLANK REPORT

## GC/MS Volatiles

Client Lot #....: A3I030288  
MB Lot-Sample #: A3I110000-486

Work Order #....: FX44W1AA

Matrix.....: WATER

Analysis Date...: 09/10/03

Prep Date.....: 09/10/03

Prep Batch #....: 3254486

Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Chloromethane	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
Acetone	ND	10	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene	ND	2.0	ug/L	SW846 8260B
(total)				
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	10	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B
2-Hexanone	ND	10	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Dibromofluoromethane	94	(73 - 122)		
1,2-Dichloroethane-d4	92	(61 - 128)		
Toluene-d8	98	(76 - 110)		
4-Bromofluorobenzene	93	(74 - 116)		

(Continued on next page)

**METHOD BLANK REPORT**

**GC/MS Volatiles**

**Client Lot #...: A3I030288**

**Work Order #...: FX44W1AA**

**Matrix.....: WATER**

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

# METHOD BLANK REPORT

## GC/MS Semivolatiles

Client Lot #....: A3I030288  
MB Lot-Sample #: A3I030000-455

Work Order #....: FXJGH1AA

Matrix.....: WATER

Analysis Date...: 09/08/03  
Dilution Factor: 1

Prep Date.....: 09/03/03

Prep Batch #....: 3246455

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Phenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)- ether	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
2,2'-oxybis(1-Chloro- propane)	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
N-Nitrosodi-n-propyl- amine	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
1,2,4-Trichloro- benzene	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta- diene	ND	50	ug/L	SW846 8270C
2,4,6-Trichloro- phenol	ND	10	ug/L	SW846 8270C
2,4,5-Trichloro- phenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	50	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C
3-Nitroaniline	ND	50	ug/L	SW846 8270C
Acenaphthene	ND	10	ug/L	SW846 8270C

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# METHOD BLANK REPORT

## GC/MS Semivolatiles

Client Lot #....: A3I030288

Work Order #....: FXJGH1AA

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-Dinitrophenol	ND	50	ug/L	SW846 8270C
4-Nitrophenol	ND	50	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
4-Nitroaniline	ND	50	ug/L	SW846 8270C
4,6-Dinitro- 2-methylphenol	ND	50	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	10	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Carbazole	ND	10	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
Fluoranthene	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	50	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	67	(32 - 112)
2-Fluorobiphenyl	55	(30 - 110)
Terphenyl-d14	71	(10 - 144)
Phenol-d5	62	(10 - 113)
2-Fluorophenol	58	(13 - 110)
2,4,6-Tribromophenol	53	(21 - 122)

(Continued on next page)

**METHOD BLANK REPORT**

**GC/MS Semivolatiles**

**Client Lot #...: A3I030288**

**Work Order #...: FXJGH1AA**

**Matrix.....: WATER**

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

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# LABORATORY CONTROL SAMPLE EVALUATION REPORT

## GC/MS Volatiles

Client Lot #...: A3I030288      Work Order #...: FX44W1AC      Matrix.....: WATER  
 LCS Lot-Sample#: A3I110000-486  
 Prep Date.....: 09/10/03      Analysis Date...: 09/10/03  
 Prep Batch #...: 3254486  
 Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
1,1-Dichloroethene	95	(63 - 130)	SW846 8260B
Trichloroethene	92	(75 - 122)	SW846 8260B
Benzene	97	(80 - 116)	SW846 8260B
Toluene	96	(74 - 119)	SW846 8260B
Chlorobenzene	91	(76 - 117)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Dibromofluoromethane	96	(73 - 122)
1,2-Dichloroethane-d4	97	(61 - 128)
Toluene-d8	98	(76 - 110)
4-Bromofluorobenzene	96	(74 - 116)

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

## GC/MS Semivolatiles

Client Lot #....: A3I030288      Work Order #....: FXJGH1AC-LCS      Matrix.....: WATER  
 LCS Lot-Sample#: A3I030000-455      FXJGH1AD-LCSD  
 Prep Date.....: 09/03/03      Analysis Date...: 09/08/03  
 Prep Batch #....: 3246455  
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	69	(10 - 131)			SW846 8270C
	71	(10 - 131)	2.8	(0-43)	SW846 8270C
2-Chlorophenol	72	(19 - 124)			SW846 8270C
	75	(19 - 124)	3.6	(0-43)	SW846 8270C
1,4-Dichlorobenzene	61	(28 - 110)			SW846 8270C
	65	(28 - 110)	7.0	(0-36)	SW846 8270C
N-Nitrosodi-n-propyl- amine	82	(30 - 115)			SW846 8270C
	84	(30 - 115)	2.9	(0-36)	SW846 8270C
1,2,4-Trichloro- benzene	63	(31 - 110)			SW846 8270C
	67	(31 - 110)	6.1	(0-37)	SW846 8270C
4-Chloro-3-methylphenol	75	(29 - 124)			SW846 8270C
	78	(29 - 124)	4.0	(0-55)	SW846 8270C
Acenaphthene	81	(39 - 118)			SW846 8270C
	81	(39 - 118)	1.0	(0-35)	SW846 8270C
4-Nitrophenol	78	(19 - 144)			SW846 8270C
	79	(19 - 144)	1.3	(0-34)	SW846 8270C
2,4-Dinitrotoluene	81	(47 - 131)			SW846 8270C
	83	(47 - 131)	1.5	(0-32)	SW846 8270C
Pentachlorophenol	65	(10 - 140)			SW846 8270C
	66	(10 - 140)	1.0	(0-56)	SW846 8270C
Pyrene	73	(46 - 130)			SW846 8270C
	70	(46 - 130)	4.2	(0-31)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	77	(32 - 112)
	80	(32 - 112)
2-Fluorobiphenyl	70	(30 - 110)
	71	(30 - 110)
Terphenyl-d14	73	(10 - 144)
	70	(10 - 144)
Phenol-d5	69	(10 - 113)
	70	(10 - 113)
2-Fluorophenol	67	(13 - 110)
	70	(13 - 110)
2,4,6-Tribromophenol	70	(21 - 122)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A3I030288      Work Order #...: FXJGH1AC-LCS      Matrix.....: WATER  
LCS Lot-Sample#: A3I030000-455      FXJGH1AD-LCSD

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
	71	(21 - 122)

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

# MATRIX SPIKE SAMPLE EVALUATION REPORT

## GC/MS Volatiles

Client Lot #....: A3I030288      Work Order #....: FXK551AC-MS      Matrix.....: WATER  
 MS Lot-Sample #: A3I040188-016      FXK551AD-MSD  
 Date Sampled....: 09/03/03      Date Received...: 09/04/03  
 Prep Date.....: 09/10/03      Analysis Date...: 09/10/03  
 Prep Batch #....: 3254486  
 Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	95	(62 - 130)			SW846 8260B
	96	(62 - 130)	0.67	(0-20)	SW846 8260B
Trichloroethene	94	(62 - 130)			SW846 8260B
	92	(62 - 130)	1.9	(0-20)	SW846 8260B
Benzene	99	(78 - 118)			SW846 8260B
	98	(78 - 118)	1.4	(0-20)	SW846 8260B
Toluene	96	(70 - 119)			SW846 8260B
	95	(70 - 119)	0.91	(0-20)	SW846 8260B
Chlorobenzene	94	(76 - 117)			SW846 8260B
	92	(76 - 117)	1.7	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(73 - 122)
	96	(73 - 122)
1,2-Dichloroethane-d4	90	(61 - 128)
	91	(61 - 128)
Toluene-d8	98	(76 - 110)
	96	(76 - 110)
4-Bromofluorobenzene	97	(74 - 116)
	96	(74 - 116)

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

STL-4124 (09031)

[illegible]

**DISTRIBUTION:** WHITE - Returned to Client with Report: CANABY - Slays with the Sample: PINK - Field Copy

## STL Cooler Receipt Form/Narrative

Lot Number: A 3103028

## North Canton Facility

Client: The Payne Firm  
Cooler Received on: 9-3-03Project: Endcap  
Opened on: 9-3-03Quote#:  
by: Anne Sanders  
(Signature)Fedx ☐ Client Drop Off ☐ UPS ☐ Airborne ☒ Other: \_\_\_\_\_  
Cooler ☒ Safe ☐ Foam Box ☐ Client Cooler ☐STL Shipper No#: M-951. Were custody seals on the outside of the cooler? Yes ☐ No ☐If YES, Quantity 1 Location overhead

Were the custody seals signed and dated?

2. Shipper's packing slip attached to this form?

3. Were custody papers included inside the cooler and relinquished?

4. Did you sign the custody papers in the appropriate place?

5. Packing material used:

Peanuts ☐ Bubble Wrap ☒ Vermiculite ☐ Foam ☒ None ☐ Other: \_\_\_\_\_6. Cooler temperature upon receipt 4.1 °C (see back of form for multiple coolers/temp)METHOD: Temp Vial ☐ Coolant & Sample ☐ Against Bottles ☐ IR ☒ ICE/H<sub>2</sub>O Slurry ☐COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐

7. Did all bottles arrive in good condition (Unbroken)?

8. Did all bottle labels and tags agree with the custody papers?

9. Were samples at the correct pH? (record on back)

10. Were correct bottles used for the tests indicated?

11. Were air bubbles &gt;6 mm in any VOA vials?

12. Was a sufficient amount of sample sent in each bottle?

Contacted PM RKT Date: 9-3-03 by: gel via Voice Mail ☒ Verbal ☐ Other ☐Concerning: SR1A

✓ MACRO MACRO

## 1. CHAIN OF CUSTODY

SR1A

The chain of custody and sample bottles did not agree. The following discrepancies occurred

Trip blank marked for voc tsuoc for 9-3-03  
bt on coc, only rec'd 2x40 mL for voc, RKT  
aware, gel 9-3-03

## 2. SAMPLE CONDITION

SR2A

Sample(s) \_\_\_\_\_ were received or requested after the recommended holding time had expired.

SR2B

Sample(s) \_\_\_\_\_ were received with insufficient volume.

SR2C

Sample(s) \_\_\_\_\_ were received in a broken container.

## 3. SAMPLE PRESERVATION

SR3A

Sample(s) \_\_\_\_\_ were further preserved in sample receiving to meet recommended pH level(s).

Nitric Acid Lot # 061603-HNO<sub>3</sub>; Sulfuric Acid Lot # 112801-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot # 011102-NaOH; Hydrochloric Acid Lot # 100902-HCl; Sodium Hydroxide and Zinc Acetate Lot # 112801-CH<sub>3</sub>COO<sub>2</sub>ZN/NaOH

SR3B

Sample(s) \_\_\_\_\_ were received with bubble &gt; 6 mm in diameter (cc: PM)

4. Other (see below or back) Project Name Endcap bottles gel 9-3-03  
gel 9-3-03

**STL Cooler Receipt Form/Narrative**  
**North Canton Facility**

[illegible]

**Discrepancies Cont.**

***Macro Name:***

**Macro Name:**

**Macro Name:**

**Other Anomalies:**

SOP: NC-SC-0003, Sample Receipt  
N:\QAQC\NARRATIVE\STL\Cooler Receipt STL\COOLER\_STL\_Rev27 072303.doc

***END OF REPORT***